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EXAMINER

NGUYEN, HUY TRAM

ART UNIT

PAPER NUMBER

1797

NOTIFICATION DATE

DELIVERY MODE

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ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed February 4, 2008 have been fully considered but they are not persuasive.

Regarding 103 rejection of Claims 1-10 and 12-18, on Page 7, applicant argues that even though Langer et al. discloses the layer adjacent the metal housing contains an intumescent material" (Col. 4, lines 5-6) and that the Langer et al. intumescent sheet can have "three or more layers wherein at least one layer comprises an intumescent material and wherein adjacent layers are desirably comprised of different compositions." (Col. 5, lines 60-64). It is submitted that the passages cited from Langer et al. do not suggest sandwiching a non-intumescent layer between two intumescent layers.

Examiner disagrees with that because if there are three layers to be used as mounting mat and in these three layers, two are intumescent layers and one is non-intumescent layer, there are only two ways to construct a mounting mat. First is two intumescent layers next to each other and second is two intumescent layers between the non-intumescent layer. Thus, it would have been obvious to try and expect to get a desired result.

Regarding 103 rejection of Claim 19, applicant argues the passage discloses in column 6, lines 32-34 of Langer et al. is a broad teaching and cannot adequately serve as the basis for a prima facie obviousness rejection of claim 19. Examiner interprets the passage in column 6, lines 32-34 of Langer et al. as the composition, thickness and

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width of each layers can be varied to meet the pressure and temperature conditions of the pollution control device in which the mounting mat is being used.

Regarding 103 rejection of Claim 11, applicant states that Papadopoulos is directed to a pollution control device that does not employ any form of mounting mat. However, the pollution control device of Papadopoulos has structure (intake and exhaust pipes) in which the pollution control device of Langer et al. can be employed for reducing pollution of the atmosphere.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-10 and 12-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Langer et al. (US Patent No. 6,458,418 B2)**.

Regarding Claim 1, Langer et al. reference discloses a multilayer mat comprising:

a non-intumescent layer comprising inorganic fibers (**Column 5, Lines 32-33 and Column 10, Lines 2-3**);

a intumescent layer forming a first outer layer of the multilayer mat (**Column 5, Lines 33-34**), and

the multilayer mat comprises three or more layers (**Column 15, Lines 60-64**)

Even though Langer et al. does not specify that the non-intumescent layer is positioned between two intumescent layers, Langer et al. states “The layer adjacent the metal housing contains an intumescent material” (**Column 4, Lines 5-6**). Furthermore, Langer et al. states, “The present invention also contemplates intumescent sheets having three or more layers wherein at least one layer comprises an intumescent material and wherein adjacent layers are desirably comprised of different compositions. (**Column 15, Lines 60-64**). Thus, two layers of intumescent materials can be used with a non-intumescent layer. Since the layer adjacent to the metal housing contains an intumescent material, the non-intumescent layer will be positioned in between the two intumescent layers to form a multilayer mat of intumescent/ non-intumescent/ intumescent. It would have been obvious to one having ordinary skill in the art at the time the invention was made to come up with the a multilayer mat having a non-intumescent layer positioned between two intumescent layers, since it has been held to be within the general skill of a worker in the art to select a known material on the basis

of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding Claim 2, Langer et al. reference discloses the multilayer mat of claim 1, wherein the first intumescent layer and the second intumescent layer each comprise an intumescent material, selected from vermiculite, expandable graphite, or combinations thereof (**Column 7, Line 66-Column 8, Line 4**).

Regarding Claims 3-4, Langer et al. reference discloses the multilayer mat of claim 1, wherein the non-intumescent layer has a thickness that is at least 50 percent of a total thickness of the multilayer mat and the non-intumescent layer is thicker than the first intumescent layer and the non-intumescent layer is thicker than the second intumescent layer (**Column 6, Lines 32-34**).

Regarding Claim 5, Langer et al. reference discloses the multilayer mat of claim 1, wherein the inorganic fiber comprises a ceramic fiber having a bulk shrinkage no greater than 10 percent (**Ceramic fibers as a non-intumescent material– Column 5, Lines 18-20 and aluminoborosilicate fibers as ceramic fibers with bulk shrinkage no greater than 10 percent – Column 8, Lines 57-59**).

Regarding Claim 6, Langer et al. reference discloses the multilayer mat of claim 1, wherein the inorganic fibers comprise glass fibers (**Column 10, Lines 17-25**).

Regarding Claim 7, Langer et al. reference discloses the multilayer mat of claim 1, wherein the inorganic fibers comprise glass fibers (**Column 10, Lines 17-25**) and both the first and second intumescent layers comprise vermiculite (**Column 7, Line 66-Column 8, Line 4**).

Regarding Claim 8, Langer et al. reference discloses the multilayer mat of claim 1, wherein the inorganic fibers comprise a ceramic fiber having a bulk shrinkage no greater than 10 percent (**aluminoborosilicate fibers as ceramic fibers with bulk shrinkage no greater than 10 percent - Column 8, Lines 57-59**) and both the first and second intumescent layers comprise vermiculite (Column 7, Line 66-Column 8, Line 4).

Regarding Claim 9, Langer et al. reference discloses the multilayer mat of claim 1, wherein two or more layers of the multilayer mat are bonded together with an adhesive, needle bonding, or stitching (**Column 3, Lines 24-27**).

Regarding Claim 10, Langer et al. reference discloses a pollution control device comprising:

- a first metal housing (**11**);

- a pollution control element inside the first metal housing (**20**);

- a multilayer mounting mat positioned between the first metal housing and the pollution control element (**30**), said multilayer mounting mat comprising:

  - a non-intumescent layer comprising inorganic fibers (**Column 5, Lines 32-33 and Column 10, Lines 2-3**);

  - a intumescent layer forming a first outer layer of the multilayer mat (**Column 5, Lines 33-34**), and

- the multilayer mat comprises three or more layers (**Column 15, Lines 60-64**)

Even though Langer et al. does not specify that the non-intumescent layer is positioned between two intumescent layers, Langer et al. states “The layer adjacent the

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metal housing contains an intumescent material” (**Column 4, Lines 5-6**). Furthermore, Langer et al. states, “The present invention also contemplates intumescent sheets having three or more layers wherein at least one layer comprises an intumescent material and wherein adjacent layers are desirably comprised of different compositions. (**Column 15, Lines 60-64**). Thus, two layers of intumescent materials can be used with a non-intumescent layer. Since the layer adjacent to the metal housing contains an intumescent material, the non-intumescent layer will be positioned in between the two intumescent layers to form a multilayer mat of intumescent/ non-intumescent/ intumescent. It would have been obvious to one having ordinary skill in the art at the time the invention was made to come up with the a multilayer mat having a non-intumescent layer positioned between two intumescent layers, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding Claims 12 and 13, Langer et al. reference discloses the pollution control device of claim 10, wherein the non-intumescent layer has a thickness that is at least 50 percent of the total thickness of the multilayer mat and the non-intumescent layer is thicker than the first intumescent layer and the non-intumescent layer is thicker than the second intumescent layer (**Column 6, Lines 32-34**).

Regarding Claim 14, Langer et al. reference discloses the pollution control device of claim 10, wherein the inorganic fibers comprise ceramic fibers having a bulk



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shrinkage less than 10 percent **(aluminoborosilicate fibers as ceramic fibers with bulk shrinkage no greater than 10 percent - Column 8, Lines 57-59).**

Regarding Claim 15, Langer et al. reference discloses the pollution control device of claim 10, wherein the inorganic fibers comprise glass fibers **(Column 10, Lines 17-25).**

Regarding Claim 16, Langer et al. reference discloses the pollution control device of claim 10, wherein the inorganic fibers comprise glass fibers and both the first and second intumescent layers comprise vermiculite **(Column 7, Line 66-Column 8, Line 4).**

Regarding Claim 19, Langer et al. reference discloses the pollution control device of claim 10, wherein the mounting mat has sufficient holding pressure at operating temperatures both higher than and lower than a temperature suitable for expanding the first and second intumescent layers **(Column 6, Lines 32-34).**

Claims 11, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Langer et al. (US Patent No. 6,458,418 B2) in view of Papadopoulos (US Patent No. 4,362,016).**

Regarding Claim 11, Langer et al. reference discloses the pollution control device of claim 10 and its use on motor vehicles except which part of the motor vehicles the pollution device are employed on. It would have been obvious to one having ordinary skill in the art at the time the invention was made to install the pollution device on a muffler in an automobile exhaust line of Papadopoulos (inside of intake and exhaust pipe

- Figure 1, numerals 5 and 6) for reducing pollution of the atmosphere. **(Papadopoulos-Figure 1, Abstract and Column 2, Line 54-57).**

Regarding Claim 18, Langer et al. and Papadopoulos references disclose the pollution control device of claim 11, wherein the pollution control element is a diesel particulate filter **(Larger et al. - Figure 2).**

Regarding Claim 21, Larger et al. and Papadopoulos references the pollution control device of claim 11, wherein the pollution control element is a catalytic converter element and the pollution control device is a catalytic converter **(Larger et al – Column 1, Lines 24-32)**

### ***Conclusion***

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy-Tram Nguyen whose telephone number is 571-270-

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3167. The examiner can normally be reached on M - F: 7:30 AM - 5:00 PM (Alternated Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HTN  
3/12/08

/Walter D. Griffin/  
Supervisory Patent Examiner, Art Unit 1797